



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/524,262	09/06/2005	Eiji Ichihara	Q86135	9895
23373                      7590                      10/20/2008				
SUGHRUE MION, PLLC				
2100 PENNSYLVANIA AVENUE, N.W.				
SUITE 800				
WASHINGTON, DC 20037				
EXAMINER				
VERBITSKY, GAIL KAPLAN				
ART UNIT		PAPER NUMBER		
2855				
MAIL DATE		DELIVERY MODE		
10/20/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/524,262

**Applicant(s)**

ICHIHARA ET AL.

**Examiner**

Gail Verbitsky

**Art Unit**

2855

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 July 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1, 2 and 6-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 6 and 11-13 is/are rejected.
- 7) ☒ Claim(s) 7-10 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

In view of the arguments (07/15/2008) set forth by applicant in the appeal brief,  
PROSECUTION IS HEREBY REOPENED.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below: \_\_\_\_\_

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-2, 6 and 12-13 are finally rejected under 35 U.S.C. 103(a) as being unpatentable over WO 01/17806A1 [hereinafter WO] in view of Aubel et al. (U.S. 6921197) [hereinafter Aubel].

WO suggests to monitor a flat/ deflated tire and teaches to position a temperature sensor in each tire and monitor an atmospheric temperature and rate of change of temperature in each tire and compare it with a predetermined value/ statistical limit/ previously determined trouble state temperature (previously determined rate of change of temperature/ previously set limit) in order to determine flat tire. WO determines first time temperature derivative and second derivative. WO suggests reinforcing the tires. WO states that it is important for a driver, when it drives a car with a deflated tire to know if the driver could drive more and for how long rather than staying on a side road and repairing the tire.

Although, this might imply that the driver wants to know the end life of the tire as function of the temperature, WO does not explicitly state that the predetermined data is a previously obtained data stored in the memory. WO does not explicitly teach to determine a time predicted to reach a limit temperature/ threshold temperature/ predetermined temperature (temperature corresponding to end life).

Aubel discloses the device in the field of applicant's endeavor. Aubel teaches to embed a temperature sensor in a tire and evaluate the tire condition with respect to runable time and integral of output temperature signal, the integral is indicative a wear signal, wherein when the integral is exceeding a threshold level, the device indicates a wear (thus, residual lifetime is judged) signal for the tire. This could indicate a flat tire, and a pressure control turns an air pump.

Aubel discloses a device/ method/ process of judging in the field of applicant's endeavor comprising detection units arranged in each tire capable of measuring

temperature of the tire and determining with respect to time (integrating) when the wear (residual lifetime) or the tire exceeds a threshold (statistically set temperature or the temperature set from the test stand), wherein the tire pressure control decides to inflate (increase pressure) the tire (thus, deciding that the tire is flat which is judged based on the measured temperature). The measured temperature is a temperature inside the tire. The device also predicts the wear (time). Auel states that the sides of the tire are more likely susceptible to wear. Also the tire damage can be detected (entire col. 5). Auel states that the too high temperature can be indication of too low pressure (flat tire). Please note: by knowing time/temperature integral, the time corresponding to a desired temperature, and thus, time to reach the desired (limit/ threshold/ predetermined) temperature can be determined.

For claims 12-13: the device has an evaluation unit/ microprocessor/ computer comprising a storage device/ memory (col. 6, lines 20-28, col. 7, lines 35-37).

In addition, Auel states that the temperature is also an indication that the tire has been driven for a long period of time (continuously) at a low pressure (col. 5, lines 33-34).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device/ method disclosed by WO so as to clearly judge the residual life of the tire with respect to the flat tire and by determining a time when the temperature is a threshold/ limit temperature, as taught by Auel, in order to allow the operator to know for how long he/ she can run the tire/ vehicle.

3. Claim 11 is finally rejected under 35 U.S.C. 103(a) as being unpatentable over WO 01/17806A1 [hereinafter WO] and Auel, as applied to claims 1-2, 6 and 12-13 above, and further in view of Tanaka Masatoshi (U.S. 6701986).

WO and Auel disclose the device/ method as stated above.

They do not teach to reinforce tire with a reinforcing rubber.

Masatoshi Tanaka states that it is very well known in the art to reinforce tires with rubber layer in order to prolong their life.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the tire, disclosed by WO and Abel, with reinforcing rubber, as taught by Masatoshi Tanaka, in order to prolong the tire life and provide the operator with the tire behavior when it is reinforced, in order to predict life of already reinforced tire.

#### ***Allowable Subject matter***

4. Claims 7-10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Response to Arguments***

5. Applicant's arguments, filed 07/15/2008 have been fully considered and they are not persuasive. However, for clarity of the record for the appeal, the Examiner repeats the previous rejection including more explanations.

Applicant states that Aubel does not teach to determine/ calculate **time predicted to reach a limit temperature**.

This argument is not persuasive because Aubel teaches to calculate/ determine a time temperature integral/ change in temperature with time and comparison of data with a predetermined/ threshold data to determine **wear signal which is inherently indicative of residual life of the tire. This would mean that the time and temperature at each point could be determined, including a point when the temperature is equal to a threshold/ limit temperature.**

Aubel teaches: "permits a brief monitoring of the state of the tire by producing a warning signal if a predetermined/ limit temperature exceeded, and which permits a long term monitoring of the tire, by detecting the temperature stressing of the tire as a **time behavior** and determine, for example, a time integral of the temperature that is a measure for the tire damage, can be utilized in a vehicle by itself. When used in the vehicle itself, the evaluation unit is advantageously integrated into a dashboard or other on-board computer and produces, for example, a warning signal if the tire shoulder temperature is too high as an indication of an air pressure that is too low and/or produces some other warning signal if the tire has, for example during a period of operation, been driven for an impermissively long period of time at a low tire pressure and can therefore be damaged".

Applicant states that Aubel fails to perform any time predictions. Once again: This argument is not persuasive because by definition a temperature integral over time is a measure for temperature change and its limit value and, thus prediction (function) when it is compared with a threshold value.

Please note that a combination of steps of determining time-temperature integral and comparison it with the threshold is indicative of determining/ predicting time to reach the limit/ threshold temperature.

With respect to claim 11: Applicant states that Tanaka is not applicable because Tanaka is not related to time and temperature. This argument is not persuasive because in the rejection on the merits, the Examiner uses Tanaka only as a secondary reference for its teaching that that tire could be reinforced. The primary reference, WO and Aubel,

teach time and temperature, therefore, the combination of the three references teaches all the limitations of claim 11.

With respect to Nowicki: the arguments are now moot, since the rejection is withdrawn.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art cited in the PTO-892 and not mentioned above disclose related devices and methods.

Tsujimoto (U.S. 5911094) teaches that based on estimated temperature, the time which elapses until the prescribed temperature is reached, could be predicted.

Kyrtsos et al. (U.S. 6712133) teaches that time needed to reach the desired/ limit temperature could be determined.

Conlon et al. (U.S. 6136607) teaches that temperature corresponding to time-to-failure could be determined.



Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gail Verbitsky whose telephone number is 571/ 272-2253. The examiner can normally be reached on 7:30 to 4:00 ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez can be reached on 571/ 272-2245. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

GKV

*Gail Verbitsky  
Primary Patent Examiner, TC 2800*

September 29, 2008

/Gail Verbitsky/  
Primary Examiner, Art Unit 2855

